A Retrospective Evaluation on the Efficacy and Complications of the use of Spinal Cord Stimulation (SCS) in treating Chronic Pain Patients at Leeds Teaching Hospitals Trust (LTHT)

G. Baranidharan MBBS, B. Roberts Student, C. Romanis Student, I. Mohamed MBChB, T. Crowther BSc, S. Black MBChB, J. Titterington MBChB, D. Bush MBChB.
Leeds Teaching Hospitals, Pain Medicine, Leeds, United Kingdom

Introduction

Spinal Cord Stimulation (SCS) has been increasingly utilised in the treatment of chronic pain since 1967. Currently around 34,000 patients are implanted annually, with approximately 130 of these being within Leeds Teaching Hospitals Trust (LTHT). There has been a flurry of publications on recent RCT's in SCS. This is real-world data on the use of SCS in a teaching hospital.

Methods

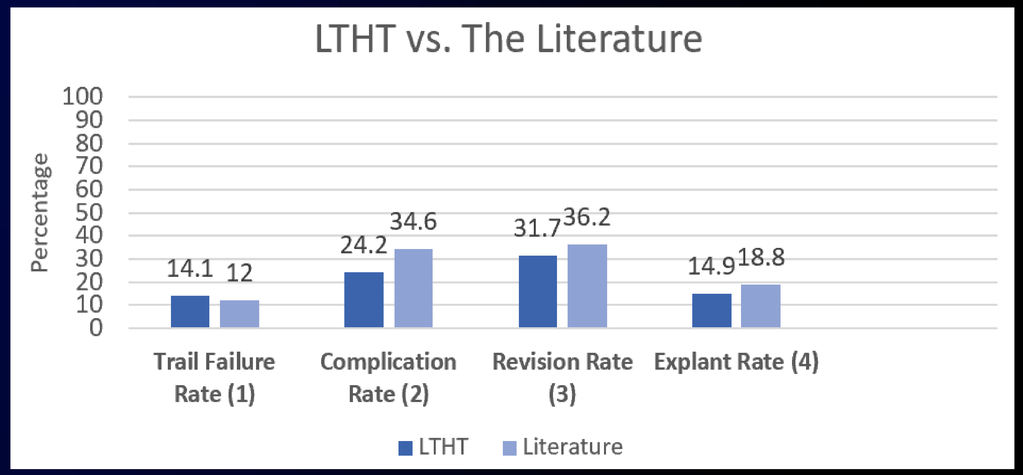
This was a retrospective cross-sectional evaluation, with data collected from patients who received SCS surgery between September 2015 to December 2016. Data was collected on Pain and Quality of Life (QoL) scores pre- and post-implantation, complications and revisions. This was done using paper files and hospital electronic records. Data was analysed using STATA and Microsoft Excel.

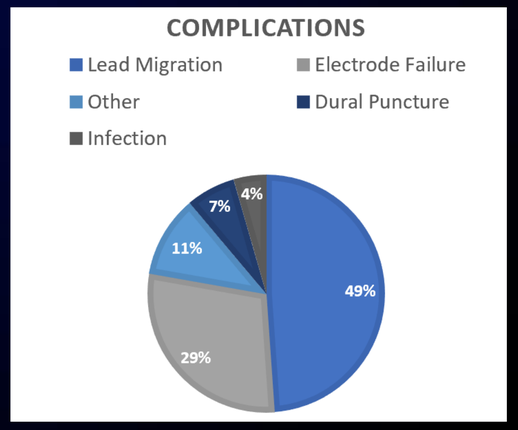
Results

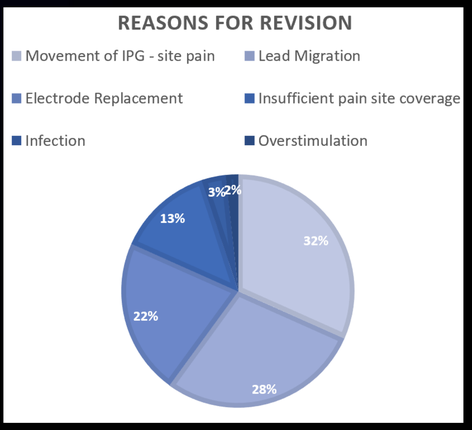
n=207 participants were eligible for this study. Due to missing data and complex cases only n=185 went forward for analysis. The age range was 18-92, there were 92 males and 93 females. The majority of patients in this study population were suffering with FBSS and CRPS. BurstDR, DRG and HF10 were the modalities of treatment used in this period.

- There was a statistically significant ($p<0.0001$) reduction in 'average pain' and 'worst pain' visual analogue scale (VAS) scores (26.9% and 24.5% respectively).
- EQ5D QoL scores increased by >0.22 ($p<0.0001$).
- Lead migration and failure secondary to fractures formed the major reason for revisions.
- The common complications included lead migration and electrode failure.
- Implantable Pulse Generator (IPG) site pain was reported by 25% of patients with 11.8% undergoing revision to the IPG site.

The figures illustrate LTHTs trial failure, complication, explant and revision rates as compared with the literature (1-4), and common complications / reasons for revision.







Conclusion

Our current retrospective data has shown that we are achieving good outcomes for patients with lower complication rates than the current literature. We are building on this data set and future analysis of over 500 participants will be put forward for publication in 2019.

References

1. Al-Kaisy A, Van Buyten J-P, Smet I, Palmisani S, Pang D, Smith T. Sustained Effectiveness of 10 kHz High-Frequency Spinal Cord Stimulation for Patients with Chronic, Low Back Pain: 24-Month Results of a Prospective Multicenter Study. Pain Med Malden Mass. 2014 Mar;15(3):347–54
2: Mekhail NA, Mathews M, Nageeb F, Guirguis M, Mekhail MN, Cheng J. Retrospective review of 707 cases of spinal cord stimulation: indications and complications. Pain Pract. 2011;11:148–153.
3: Bir SC, Konar S, Maiti T, Nanda A, Guthikonda B. Neuromodulation in intractable pain management: outcomes and predictors of revisions of spinal cord stimulators. Neurosurg Focus. 2016 May 1;40(5):E4.
4:Van Buyten J-P, Wille F, Smet I, Wensing C, Breel J, Karst E, et al. Therapy-Related Explants After Spinal Cord Stimulation: Results of an International Retrospective Chart Review Study. Neuromodulation J Int Neuromodulation Soc. 2017 Oct;20(7):642–9.

The Leeds Teaching Hospitals NHS Trust

UNIVERSITY OF LEEDS